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## Embedded developers need an open source over-the-air software updater without the lock-in



Ralph Nguyen, Mender

The topic of OTA software updates for embedded devices is gaining attention as embedded systems are increasingly being connected. Highly publicized breaches continue to demonstrate the lack of security in the design of embedded systems. The software update process itself is intricate with many security considerations and it plays an urgent role in the security of the Internet of Things. A good example is the Jeep Cherokee hack in July 2015. A couple components that allowed two security researchers to hack into the vehicle...

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### **Addressing the OT and IT Data Integration Challenge in Next Generation IIoT and Industrie 4.0 Systems**

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May 23, 2pm ET

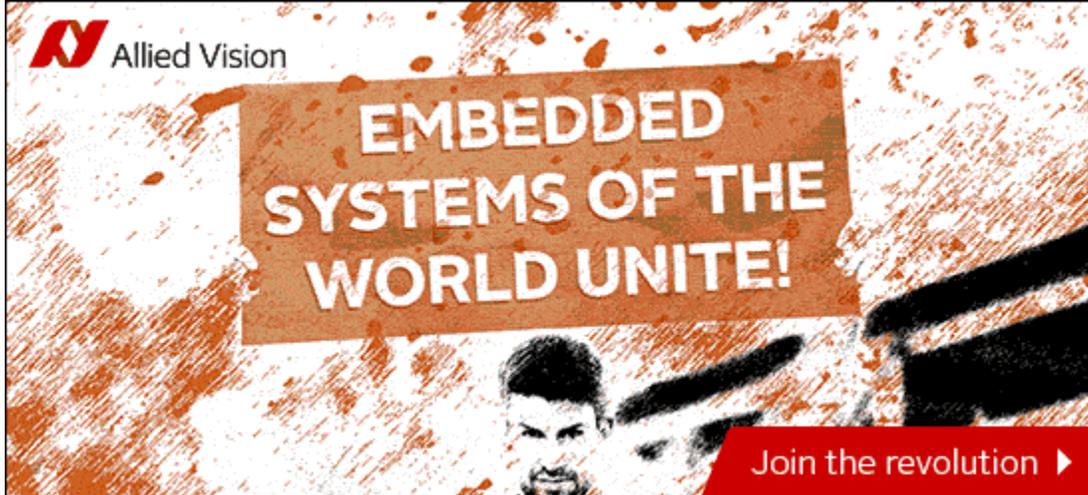
## Which IoT protocol should I use for my system?



Christian Legare, Micrium

Embedded systems using sensors and connectivity are not new to developers. However, using these elements with multiple additional Internet technologies is. Internet protocols (IPs) are not new, but dedicated IPs for the Internet of Things (IoT) are, and they are used to help shape system capabilities. There are multiple IP application layer protocols above TCP/IP sockets. Each one has its advantages and constraints. Knowing them helps developers make the best design choices for a product. Bandwidth requirements, real-time performance, and memory footprint are some... [Continued...](#)

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## Powering ahead: Market pushes power systems forward



Alix Paultre, Contributing Editor

Alix has joined the Embedded Computing Design staff as a regular contributor. You'll see him covering analog/power for us on a frequent basis. It is a great time to be an electronic design engineer in the embedded space, especially when it comes to power systems. Power is sexy again, but it isn't because people have suddenly fallen in love with capacitors and MOSFETs – it's because market pressures have made it so. Nobody cares about power until the battery runs out, and that fear... [Continued...](#)

## Understanding IoT requirements 101, part 1



Jaya Kathuria, Cypress *and* Anbarasu Samiappan, Cypress

To play in the Internet of Things (IoT) market, original equipment manufacturers (OEMs) need to be able to embrace a faster rate of innovation. The possible spectrum of IoT applications is endless, and successful companies enable their developers to continuously identify and implement new and more useful ways to harness the capabilities of sensors, monitor different types of data, and control ecosystems of devices. IoT applications cross many domains, including wearables, cars, homes, industries, and even cities. In addition to allowing developers to implement... [Continued...](#)

## Embedded Insiders Podcast: Analog and Smart Alix



Brandon Lewis, Technology Editor, Rich Nass, Embedded Computing Brand Director, *and* Alix Paultre, Contributing Editor



The Embedded Insiders welcome in the newest member of the Embedded Computing Design editorial team, Alix Paultre. Alex will be covering analog and power topics from his home base outside of Frankfurt, Germany, and in this episode he discusses highlights from the recent Applied Power Electronics Conference (APEC), including Gallium Nitride (GaN), silicon carbide, packaging, and digitally enhanced analog. Analog Power APEC Microcontrollers Gallium Nitride [soundcloud url="https://api.soundcloud.com/tracks/315286507"]

## Speeding embedded systems time to market using Node.js



Michael Schmidt, Technologic Systems

Developing in a traditional embedded systems language such as C is hard, yielding long development times and slow time to market. Newer languages such as Java, Python, or PHP are easier, but do not provide a comprehensive end-to-end solution with a shallow learning curve and fast development cycle times. Instead, they require or encourage additional components such as a dedicated web server or database engine along with their additional administrative and maintenance requirements, which often represent the antithesis of embedded software. In this article... [Continued...](#)



## Embedded systems engineers are dropping the ball when it comes to security!



Curt Schwaderer Editorial Director

In an eye-opening embedded systems safety and security survey conducted by the Barr Group, 28 percent of respondents said the systems they work on could cause injury or fatalities and 60 percent of the respondents said their systems were connected to the Internet. Disturbingly, even when their systems could be dangerous and were on the Internet, 22 percent of engineers said security was not a design requirement on their project. This is the Barr Group's third annual survey on safety and security. And... [Continued...](#)



## CSPN: What U.S. companies need to know about the security certification process



Telemaco Melia, PhD, Kudelski Security

Impact of the Internet of Things (IoT) on the certification process In the rapidly evolving IoT market, product security validation and certification is critical, especially in an age where every device, regardless of significance, is now a target for hackers. While Common Criteria (CC) and the Federal Information Processing Standard (FIPS) have long been the gold standard of certifications, the Certification Securite de Premier Niveau (CSPN) is fast-becoming popular in Europe, but currently only legally applies to the French marketplace. If your company has... [Continued...](#)



## Defining (artificial) intelligence at the edge for IoT systems



Brandon Lewis, Technology Editor

Merriam-Webster defines intelligence as “the ability to learn or understand or to deal with new or trying situations.” By that definition, “intelligent systems” on the Internet of Things (IoT) require much more than just an Internet connection. As more IoT devices come online, machine intelligence will increasingly be classified as a system’s ability to ingest information from its ambient environment via sensor inputs before taking immediate, autonomous action – even in the event that the readings associated with those inputs have not been encountered...



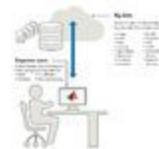
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## Big data for engineers and scientists, part 1: Introduction



Dave Oswill, MathWorks

Working with big data is fast becoming a key step in the process of scientific discovery and engineering. This is happening as technologies such as smart sensors and the Internet of Things (IoT) are enabling the collection of vast amounts of detailed data from scientific instruments, manufacturing systems, connected cars, and aircraft. There is significant value to this data, as it may show important physical phenomena or provide information on the operating environment, efficiency, and health of a system. With the proper tools and...



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### Contact the Editor:

**Jamie Leland**

E-mail: [jleland@opensystemsmedia.com](mailto:jleland@opensystemsmedia.com)

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